

U.S. Patent Application Serial No. 09/420,507
Amendment dated June 22, 2004
Reply to OA of **January 29, 2004**

REMARKS

Claims 7-10 have been amended in order to more particularly point out, and distinctly claim the subject matter to which the applicant regards as his invention. The applicant respectfully submits that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated **January 29, 2004**.

Claim Objections

Claim 5 was objected to because of minor informalities and has now been canceled, thus obviating this objection.

Claim 7 has been objected to because of minor informalities and claims 8-12 are objected to as being dependent upon claim 7.

Claim 7 has been amended as suggested by the Examiner, thus obviating this objection to claim 7 and the claims dependent thereon.

Claim Rejections under 35 USC §103

Claims 1 and 5-6 are rejected under 35 USC §103(a) as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of Kaneko et al. (U.S. Patent No. 5,262,868) and further in view of Hidetoshi et al. (JP 06-022262).

Claims 1 and 5-6 have been canceled. Therefore, withdrawal of the rejection of Claims 1 and 5-6 under 35 USC §103(a) as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of

U.S. Patent Application Serial No. 09/420,507
Amendment dated June 22, 2004
Reply to OA of January 29, 2004

Kaneko et al. (U.S. Patent No. 5,262,868) and further in view of Hidetoshi et al. (JP 06-022262) is respectfully requested.

Claims 2 and 3 are rejected under 35 USC §103(a) as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of Kaneko et al. (U.S. Patent No. 5,262,868) and Hidetoshi et al. (JP 06-022262) and further in view of Misawa (U.S. Patent No. 6,208,380).

Claims 2 and 3 have been canceled. Therefore, withdrawal of the rejection of Claims 2 and 3 under 35 USC §103(a) as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of Kaneko et al. (U.S. Patent No. 5,262,868) and Hidetoshi et al. (JP 06-022262) and further in view of Misawa (U.S. Patent No. 6,208,380) is respectfully requested.

Claim 4 is rejected under 35 USC §103(a) as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of Kaneko et al. (U.S. Patent No. 5,262,868) and Hidetoshi et al. (JP 06-022262) and further in view of Ejima (U.S. Patent No. 6,188,432).

Claim 4 has been canceled. Therefore, withdrawal of the rejection of Claim 4 under 35 USC §103(a) as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of Kaneko et al. (U.S. Patent No. 5,262,868) and Hidetoshi et al. (JP 06-022262) and further in view of Ejima (U.S. Patent No. 6,188,432) is respectfully requested.

Claims 7 and 8 are rejected under 35 USC §103 as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of Hidetoshi et al. (JP 06-022262).

According to the present invention, an object is imaged by an imaging device. Regarding a recording mode, there are two modes: one is a first mode for recording one screen of image signal corresponding to an object image which is imaged by the imaging device, and a second mode for recording a plurality of screens of image signals corresponding to the object images which are imaged by the imaging device, and any one of the recording modes is selected by a selector. A recorder records to a recording medium the imaging signals having the number of screens corresponding to the selected mode. A displayer displays a real-time motion image corresponding to the object images which are imaged by the imaging device during a time period that no recording process is performed by the recorder.

When a recording instruction is issued, a remaining amount of a battery is detected by a detector. A determiner determines whether or not the detected remaining amount of the battery is equal to or more than a threshold value corresponding to the selected mode out of a first threshold value corresponding to the first mode and a second threshold value corresponding to the second mode. A controller enables the recorder when a determination result of the determiner is affirmative, and disables the recorder when the determination result of the determiner is negative.

When the remaining amount of the battery is sufficient, the real-time motion image is displayed before the recording instruction is issued, the image signal is recorded into the recording medium in response to the recording instruction, and the real-time motion image is once again

displayed after the recording process. In contrary, when the remaining amount of the battery is insufficient, the recording instruction is ignored, and the real-time motion image continues being displayed.

The remaining amount of the battery is determined when the recording instruction is issued, and the enabling/disabling of the recorder is controlled corresponding to the determination result. This enables to avoid a situation in which the process is suspended when the recording is still performed.

In addition, unless the recording instruction is issued, the remaining amount of the battery is not compared to the threshold value, and the controller does not perform a control operation, either. Thus, unless the recording instruction is issued, the real-time motion image continues being displayed as long as possible even after the remaining amount of the battery falls below the threshold value. This enables to adjust an imaging condition such as an amount of exposure, a focus, or a white balance, and to use as a telescope that takes advantage of a zooming function.

In contrary, Sakai discloses that a clock frequency is changed corresponding to the imaging mode so as to restrain consumed electricity, and thereby, longevity of the battery is prolonged. However, as the Examiner admits, Sakai fails to disclose or remotely suggest anything about the process of displaying the real-time moving image, the process of detecting the remaining amount of the battery, the process of determining the detected remained amount, and the process of enabling/disabling the recording corresponding to the determination result. Therefore, the applicant believes that it is not possible to reach the present invention from Sakai.

Hidetoshi et al. disclose that a motion image recording mode or a still image recording mode is selectable by a mode selecting switch, and a stopping a power supply from the battery to a plurality of circuits including a camera portion when a battery voltage falls below the threshold value corresponding to the selected recording mode. More specifically, if the motion image recording mode is selected, the power supply is stopped when the battery voltage is equal to or smaller than a threshold value "a", and if the still image recording mode is selected, the power supply is stopped when the battery voltage is equal to or smaller than a threshold value "b ($b < a$)". It is noted that when the battery voltage is equal to or smaller than the threshold value "a", and larger than "b", only the still image recording mode is allowed to be selected.

That is, the battery voltage is always compared to the threshold value irrespective of whether or not the recording instruction is issued, and the power supply is stopped at a time that the battery voltage is equal to or smaller than the threshold value. Thus, in Hidetoshi et al., it is not possible to continue displaying the real-time image as long as possible as in the present invention.

It is noted that Hidetoshi et al. fail to disclose or remotely suggest anything about detecting the remaining amount of the battery when the recording instruction is issued so as to compare to the threshold value corresponding to the current recording mode. Accordingly, the applicant believes that it is not possible to reach the present invention from Hidetoshi et al.

Next, regarding a combination of Sakai, and Hidetoshi et al., either reference fails to disclose or remotely suggest anything about detecting the remaining amount of the battery when the recording instruction is issued, and comparing the detected remaining amount to the threshold value

corresponding to the current recording mode. Accordingly, we believe that it is not possible to reach the present invention from the combination of these references, and therefore, the present invention is patentable.

Therefore, claim 7 patentably distinguishes over the prior art relied upon by reciting,

“An electronic camera which is driven by a battery, comprising: an imaging device for imaging an object; a selector for selecting anyone of a first mode for recording one scene of image signal corresponding to an object image which is imaged by said imaging device and a second mode for recording a plurality of scenes of image signals corresponding to the object images which are imaged by said imaging device; a recorder for recording to a recording medium the image signal(s) having the number of scenes corresponding to the mode selected by said selector; a display for displaying a real-time motion image corresponding to the object images which are imaged by said imaging device during a time period that no recording process is performed by said recorder; a determiner for determining, at a timing that a recording instruction is issued, whether or not a remaining amount of said battery is equal to or more than a threshold value corresponding to the mode selected by said selector out of a first threshold value corresponding to the first mode and a second threshold value corresponding to the second mode; and a controller for enabling said recorder when a determination result of said determiner is affirmative and disabling said recorder when the determination result of said determiner is negative.”
(Emphasis Added)

Therefore, withdrawal of the rejection of Claims 7 and 8 under 35 USC §103 as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of Hidetoshi et al. (JP 06-022262) is respectfully requested.

Claims 9 and 12 are rejected under 35 USC §103(a) as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of Hidetoshi et al. (JP 06-022262) and further in view of Kaneko et al. (U.S. Patent No. 5,262,868).

Claims 9 and 12 are allowable by virtue of their dependence upon an allowable independent claim. Therefore, withdrawal of the rejection of Claims 9 and 12 under 35 USC §103(a) as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of Hidetoshi et al. (JP 06-022262) and further in view of Kaneko et al. (U.S. Patent No. 5,262,868) is respectfully requested.

Claims 10-11 are rejected under 35 USC §103(a) as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of Hidetoshi et al. (JP 06-022262) and Kaneko et al. (U.S. Patent No. 5,262,868) and further in view of Ejima (U.S. Patent No. 6,188,432).

Claims 10-11 are allowable by virtue of their dependence upon an allowable independent claim. Therefore, withdrawal of the rejection of Claims 10-11 under 35 USC §103(a) as being unpatentable over Sakai (U.S. Patent No. 5,206,730) in view of Hidetoshi et al. (JP 06-022262) and Kaneko et al. (U.S. Patent No. 5,262,868) and further in view of Ejima (U.S. Patent No. 6,188,432) is respectfully requested.

Conclusion

In view of the aforementioned amendments and accompanying remarks, claims 7-10, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS,
HANSON & BROOKS, LLP



George N. Stevens
Attorney for Applicant
Reg. No. 36,938

GNS/alw
Atty. Docket No. 991207
Suite 1000
1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930



23850

PATENT TRADEMARK OFFICE